

Patent Application No. 10/606,137  
Amdt. Dated November 30, 2006  
Reply to Final Office Action of July 28, 2006

2

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listing of Claims:**

Claim 1. (Original): A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.

Claim 2. (Original): The method of claim 1, wherein said asparagine-reducing enzyme is asparaginase.

Claim 3. (Original): The method of claim 1, wherein the level of asparagine is reduced by at least about 10%.

Claim 4. (Original): The method of claim 1, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.

Claim 5. (Original): A method for reducing the level of asparagine in a food material, comprising:

- (1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;
- (2) optionally mixing the enzyme with the food material;
- (3) allowing a sufficient time for the enzyme to react with the asparagine; and
- (4) optionally deactivating or optionally removing the enzyme.

Claim 6. (Previously Presented): The method of reducing the level of acrylamide in Claim 5 in a food material, comprising reducing the level of asparagine in the food material before heating.

Patent Application No. 10/606,137  
Amdt. Dated November 30, 2006  
Reply to Final Office Action of July 28, 2006

3

Claim 7. (Original): The method of claim 6, wherein reducing the level of asparagine in the food product comprises adding an asparagine-reducing enzyme to the food material.

Claim 8. (Original): The method of claim 7, wherein said asparagine-reducing enzyme is asparaginase.

Claim 9. (Original): The method of claim 7, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.

Claim 10. (Original): A method for reducing the level of acrylamide in food, comprising:

- (1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;
- (2) optionally mixing the enzyme with the food material;
- (3) allowing a sufficient time for the enzyme to react with the asparagine;
- (4) optionally deactivating or optionally removing the enzyme; and
- (5) heating the food material to form the finished food product.

Claim 11. (Currently Amended): A food material, wherein the level of asparagine in said food material is reduced by at least about 10% ~~from the level in the food material in a previous condition.~~

Claim 12. (Original): The food material of claim 11, wherein the level of asparagine in said food material is reduced by at least about 30%.

Claim 13. (Original): The food material of claim 12, wherein the level of asparagine in said food material is reduced by at least about 50%.

Patent Application No. 10/606,137  
Arndt. Dated November 30, 2006  
Reply to Final Office Action of July 28, 2006

4

Claim 14. (Original): The food material of claim 13, wherein the level of asparagine in said food material is reduced by at least about 70%.

Claim 15. (Original): The food material of claim 14, wherein the level of asparagine in said food material is reduced by at least about 90%.

Claim 16. (Currently Amended): A food product comprising a food material, wherein the level of asparagine in said food material is reduced by at least about 10% ~~from the level in the food material in a previous condition.~~

Claim 17. (Original): The food product of claim 16, wherein the level of asparagine in said food material is reduced by at least about 30%.

Claim 18. (Original): The food product of claim 17, wherein the level of asparagine in said food material is reduced by at least about 50%.

Claim 19. (Original): The food product of claim 18, wherein the level of asparagine in said food material is reduced by at least about 70%.

Claim 20. (Original): The food product of claim 19, wherein the level of asparagine in said food material is reduced by at least about 90%.

Claim 21. (Original): The food product of claim 16, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.

Claims 22 – 41 (Canceled)

Claim 42. (Original): Tortilla chips comprising less than about 75 ppb acrylamide.

Claim 43. (Original): The tortilla chips of claim 42, comprising less than about 50 ppb acrylamide.

Patent Application No. 10/606,137  
Amdt. Dated November 30, 2006  
Reply to Final Office Action of July 28, 2006

5

Claim 44. (Original): The tortilla chips of claim 43, comprising less than about 10 ppb acrylamide.

Claim 45. (Canceled)

Claim 46. (Canceled)

Claim 47. (Currently Amended): An article of commerce comprising:

(a) a food product, wherein said food product has a reduced level of asparagine ~~compared to the level in the food product in a previous condition;~~

(b) a container for containing the food product; and

(c) a message associated with the container;

wherein said message associated with the container informs the consumer that the food product contains a reduced level of asparagine.

Claim 48. (Original): The article of claim 47, wherein said message informs the consumer that the food product is low in asparagine.

Claim 49. (Canceled)

Claim 50. (Previously Presented): The article of claim 47, wherein said food product is a food ingredient.

Claim 51 (Previously presented): A method for the reduction of acrylamide in thermally processed foods comprising the steps of:

(a) providing a food material that contains free asparagine;

(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;

(c) using said food material as a component in a food mixture; and

(d) heating said food mixture to form a thermally processed food product.

Patent Application No. 10/606,137  
Amdt. Dated November 30, 2006  
Reply to Final Office Action of July 28, 2006

6

**Claim 52 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises primarily a carbohydrate.

**Claim 53 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material is selected from the group comprising rice, wheat, corn, potato and oats.

**Claim 54 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises potato.

**Claim 55 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the asparagine-containing food material further comprises at least one other amino acid.

**Claim 56 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 55 wherein the at least one other amino acid is lysine.

**Claim 57 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar.

**Claim 58 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 57 wherein the simple sugar comprises glucose.

**Claim 59 (Previously presented):** The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food mixture is heated at step (d) to a temperature of at least about 121°C.

Patent Application No. 10/606,137  
Amdt. Dated November 30, 2006  
Reply to Final Office Action of July 28, 2006

7

Claim 60 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between about 121°C and about 191°C.

Claim 61 (Previously presented): A food produced by the method of Claim 51.

Claim 62 (Previously presented): The food of Claim 61 wherein said food comprises potato.

Claim 63 (Previously presented): The food of Claim 62 wherein said food comprises potato chips.